

Grants and Contracts Award Summary

January 1 – March 31, 2015

For your reading convenience, this summary is divided into two sections. The top section lists awards new to the university - "New & Transfer Awards". The section below it lists renewal, continued, and supplemental funding for previously awarded projects - "Awards for Ongoing Work".

NEW & TRANSFER AWARDS

Salah-Uddin Ahmed (PI) – College of Pharmacy

Rheumatology Research Foundation
"Health Professional Research Preceptorship"

The Rheumatology Research Foundation's Health Professional Research Preceptorship program helps introduce students to rheumatology-related health care by supporting full-time research by a graduate student in the broad area of rheumatic disease. This grant provides funds for the PI to serve as a preceptor to PhD student Solomon Agere.

Julie Akers (PI); Linda Garrelts MacLean; Bidisha Mandal – College of Pharmacy/College of Agricultural, Human and Natural Resource Sciences

National Association of Chain Drug Stores Foundation
"Pharmacist Care for Patients with Minor Illnesses in Washington State"

This grant funds a study of the effectiveness of pharmacist-provided care for 20 minor ailments and conditions, comparing the quality and cost of this care with that provided in primary care offices, urgent care clinics, and emergency rooms. The WSU team will help a community pharmacy chain to implement patient care clinics at ten of its Spokane area locations and collect data for the study. A regional health plan will work with the research team to provide anonymous data on care provided in the other settings.

Gregory Belenky (PI) – Sleep and Performance Research Center

Virginia Tech University/Federal Motor Carrier Safety Administration, US Dept. of Transportation
"How Much Restorative Rest is Needed for Motor Coach Drivers?"

This is a subaward of a grant for additional work on a previously conducted field study of fatigue in motor coach drivers. The work involves a reanalysis of data to examine the relationship between sleep and time off duty. The goal is to see how much sleep drivers get in relation to time off between shifts, which helps determine how much time off drivers need between shifts to

ensure that they get 7 to 8 hours of sleep in every 24 hours, which is the amount of sleep thought to sustain operational performance.

Dennis Dyck (PI) – Dept. of Psychology, College of Arts and Sciences

Washington State Department of Social and Health Services
"Children's Behavioral Health Workforce Collaborative"

This is new funding for a contract with the Washington State Department of Social and Health Services. WSU is helping the department to establish the staffing infrastructure for a workforce development collaborative to support mental health and substance abuse education, training, and support for children's and youth behavioral health providers. The new workforce development collaborative will be housed within WSU Extension as the Youth and Families Program Unit.

Darrell Fisher (PI); Janean Fidel – College of Pharmacy/College of Veterinary Medicine

Life Sciences Discovery Fund
"Optimized Injectable Radiogels For High-Dose Therapy of Non-Resectable Solid Tumors"

This grant funds a study to determine the feasibility of using yttrium-90-radiogel in cancer treatment. Yttrium-90-radio gel is designed for use in brachytherapy, an advanced cancer treatment that delivers radioactive sources close to the tumor while reducing radiation exposure to surrounding, healthy tissues. It is meant to be injected into solid tumors that cannot be surgically removed or treated through conventional radiation or chemotherapy. The researchers will look at the feasibility of administering yttrium-90-radiogel as compared to traditional therapy, the incidence of any side effects, any changes in survival rate, and gather other data needed for the product's approval and commercialization.

Marcos Frank (PI) – Sleep and Performance Research Center/College of Medical Sciences

National Institutes of Health
"Non-Neuronal Regulators of Sleep"

This is funding that was transferred from the PI's previous institution for a study of the potential role of gliotransmission—chemical signaling between glia and neurons in the brain—in sleepiness and impaired cognitive functioning after sleep loss. The study could contribute to new ways to combat excessive daytime sleepiness and insomnia, as well as attention, learning, and memory problems associated with sleep loss.

Janessa Graves (PI) – College of Nursing

University of Washington
"Evaluation of Policy to Require the Use of Evidence-Based Guidelines for Advanced Imaging (MRI) Utilization for Workers' Compensation Claimants with Low Back Pain"

This is a subcontract for the PI to conduct an evaluation of a policy implemented by the Washington State Department of Labor and Industries that requires prior authorization for all Washington State Workers' Compensation State Fund claims involving early advanced imaging procedures for acute, nonspecific low back pain. The evaluation of the policy will compare service patterns, disability, and cost outcomes for the use of early lumbar magnetic resonance imaging (MRI) for acute low back pain before and after implementation of the policy. One goal is to determine whether the new policy has led to a reduction in the unnecessary use of MRI for acute, nonspecific occupational low back pain.

Carl Mikota (PI) – College of Pharmacy

Yakima Valley Memorial Hospital
"Mikota Staff Assignment at YVMH"

This contract provides funding for Clinical Assistant Professor Carl Mikota to spend 50 percent of his time providing pharmacy department support at Yakima Valley Memorial Hospital, including development and implementation support for innovative clinical pharmacy services; participation in quality improvement initiatives; education and training for hospital pharmacy staff; establishment of an independent clinical research program, and supervision of pharmacy students and residents.

Mary Paine (PI) – College of Pharmacy

University of Colorado Denver/National Institutes of Health
"Drug Metabolizing Enzyme and Transporter Function in Chronic Kidney Disease"

This funding comes from a subaward of an NIH-funded project awarded to the University of Colorado Denver. It funds a translational research project to examine the effects of vitamin D supplements on the enzymes and proteins that help deliver and metabolize drugs in patients with chronic kidney disease (CKD), who are known to suffer from vitamin D deficiency. The results will be used to guide development of new dosing regimens for drugs that are affected by the altered metabolism and or transport in CKD patients.

Éva Szentirmai (PI); Weihang Chai; Levente Kapas; Ken Roberts – Sleep and Performance Research Center/College of Medical Sciences

National Institutes of Health
"Brown Adipose Tissue and Sleep Regulation"

This grant funds a study to find out how brown fat interacts with our brain to regulate sleep. Brown fat is a beneficial fat that helps burn the calories stored in white fat and regulates our body temperature. In previous studies, decreased brown fat activity was associated with less sleep and less deep sleep. This work could open the door to new drugs to combat obesity, metabolic syndrome, and chronic sleep loss.

Hans Van Dongen (PI); Dene Grigar; Sandip Roy; Mike Ebinger - Sleep and Performance Research Center/College of Medical Sciences/College of Arts and Sciences/School of Electrical Engineering and Computer Science/University Center for Innovation

WSU Office of Commercialization

"User Interface and Commercialization Plan for Drowsy Driver Detection at Moderate levels of Fatigue"

This is internal funding under the Commercialization Gap Funding program for a project to help commercialize a recently patented drowsy driver detection technology. The technology uses sensors in the steering column of a vehicle to measure a driver's normal steering movements and can detect when changes in the steering pattern indicate driver fatigue. This project encompasses the development of an app that will enable the system to interface with a phone or tablet computer to produce a customizable warning; work to improve the processing of the sensor data to increase the effectiveness of the algorithm on which the technology is based; and development of a prototype to demonstrate the device's effectiveness and marketability. WSU Vancouver provides matching funds for this project.

AWARDS FOR ONGOING WORK

(Renewal, continued, and supplemental funding for projects awarded previously)

Salah-Uddin Ahmed (PI) – College of Pharmacy

National Institutes of Health

"Regulation of IL-6 Mediated Inflammation and Tissue Destruction by EGCG"

This is continued funding for a project aimed at developing safer, more cost-effective new therapies for rheumatoid arthritis based on EGCG, an active component found in green tea. The researcher will study the cellular and molecular mechanisms by which EGCG blocks the production of interleukin-6 (IL-6), a protein that has been shown to play a key role in the progression of rheumatoid arthritis. IL-6 is the target of a new medication for the disease that has been shown to be effective, but is very costly and comes with severe side effects. As part of the study, the researcher will test whether EGCG is effective at fighting systemic and local inflammation; slowing down bone destruction; and suppressing vascular dysfunction in rheumatoid arthritis.

Chris Blodgett (PI) – Area Health Education Center

Washington State Department of Learning

"MIECHV Program Data Benchmarks Plan (D/B Plan) Cohorts 3 & 6"

This is renewal funding for two contracts for AHEC's work to support the federal maternal, infant, and early childhood home visiting grant program. The program facilitates collaboration

and partnership at the federal, state, and community levels to improve health and development outcomes for at-risk children through evidence-based home visiting programs.

Dennis Dyck (PI) – Dept. of Psychology, College of Arts and Sciences

Washington State Department of Social and Health Services
"SOC Implementation Phase 3 Continued"

This is additional funding for a contract with the Washington State Department of Social and Health Services to provide staffing, infrastructure, and expertise for the development of statewide evidence-based peer support programs for mental health and substance abuse. The work under this contract includes the development of initiatives to increase youth and family engagement in behavioral health policy, planning, and service delivery; training and workforce development for providers and/or mental health consumers; identification, review, and development of peer support models and programs; and research and evaluation and development and implementation of evidence-based practice.

K Michael Gibson (PI) – College of Pharmacy

University of Nebraska/ National Institutes of Health – National Institute of Child Health and Human Development
"Sterol and Isoprenoid Disease Consortium"

This is renewal funding for a subcontract that funds a pilot project of the Sterol and Isoprenoid Diseases (STAIR) consortium, a collaborative group of investigators dedicated to clinical research on disorders related to the metabolism of cholesterol and other sterols and isoprenoids. This project evaluates cell surface biomarkers in patients with Hyper IgD syndrome (HIDS), a periodic fever syndrome resulting from a defect in the cholesterol pathway known as mevalonate kinase deficiency. A mouse model of this disorder developed by the PI has shown innate and adaptive immunity abnormalities

K Michael Gibson (PI) – College of Pharmacy

National Institutes of Health/National Institute of Neurological Disorders and Stroke
"Phase II Trial of SGS-742 in Succinic Semialdehyde Dehydrogenase Deficiency"

This is renewal funding for a clinical trial to test the effectiveness of the experimental drug SGS742 on succinic semialdehyde dehydrogenase (SSADH) deficiency, an inherited disorder with characteristics of autism and epilepsy. SSADH is involved in breaking down a neurotransmitter known as GABA (gamma-aminobutyric acid), which prevents the brain from being overloaded with too many electrical signals. SSADH deficiency leads to an increase of GABA and a related molecule called gammahydroxybutyrate (GHB), particularly in the central nervous system. SGS742 targets a specific GABA receptor in the brain. The study may lead to better treatment for SSADH deficiency and related disorders that involve GABA metabolism.

Devon Grant (PI); Hans Van Dongen; Matt Layton – Sleep and Performance Research Center/College of Medical Sciences

Pulsar Informatics/U.S. Department of Defense, Office of Naval Research
"Unobtrusive, Wearable Sensor Array to Collect Actigraphy, Ship Motion, Vibration, Noise and Temperature"

This is renewal funding for a study to compare three different versions of an alertness test known as the psychomotor vigilance task (PVT), as well as testing a new version of a neuropsychological test battery that measures physiological and psychological stress responses. Volunteer subjects with insomnia will perform these tests every 3 hours during a 38-hour period of sleep deprivation. Findings will be compared against previous findings in healthy normal sleepers.

Janet Katz (PI); Carrie Holliday; Donelle Howell; Roberta Paul; Celestina Barbosa-Leiker; Jeffery Peterson – College of Nursing/Murrow College of Communications

National Institutes of Health
"Substance Abuse & Mental Health Collaborative for Rural American Indian Adolescents"

This is continued funding for a project that involves the establishment of a community-based participatory research partnership to help reduce health disparities in American Indian communities, particularly in the areas of mental health and substance abuse disorders among adolescents.

Matt Layton (PI) – College of Medical Sciences

Providence Medical Research Center/Sacred Heart Medical Center
"WWAMI Partnership with Providence Health Care"

This is renewal funding for a staff assignment for Dr. Matt Layton at Sacred Heart Medical Center, where he heads up the psychiatry residency and works with third-year medical students doing their six-week psychiatry clerkships.

Kay Meier (PI) – College of Pharmacy

American Society for Pharmacology and Experimental Therapeutics (ASPET)
"ASPET Institutional Summer Undergraduate Research Fellowship (SURF) Award"

This grant provides partial funding to continue the Summer Undergraduate Research Fellowship (SURF) offered by the Department of Pharmaceutical Sciences in the College of Pharmacy. The program provides undergraduate students with hands-on experience in pharmaceutical or biomedical research as a way to promote graduate education and research careers in the field.

Gary Pollack (PI) – College of Pharmacy

Western Interstate Commission for Higher Education
"WI/WICHE 2014-15"

The Western Interstate Commission for Higher Education (WICHE) is a regional organization created to facilitate resource sharing among the higher education systems of the west. It offers tuition-reciprocity programs that allow undergraduate and graduate students who are residents of the WICHE member states to enroll in programs at participating institutions outside of their home state and pay a reduced tuition rate. The WICHE states are Alaska, Arizona, California, Colorado, Hawai'i, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, Wyoming, and the Commonwealth of the Northern Mariana Islands.

John Roll (PI); Patricia Butterfield; Celestina Barbosa-Leiker; Joann Dotson; Dennis Dyck; Donelle Howell; Janet Katz; Sterling McPherson; Roberta Paul – College of Nursing/College of Arts and Sciences

National Institutes of Health
"Behavioral Health Collaborative for Rural American Indian Communities"

This is a continued grant funding for a center for excellence—in collaboration with the University of Washington—to establish a behavioral health collaborative in rural American Indian communities. The center aims to contribute to improved mental health and reduced substance abuse in rural American Indian communities through the development and dissemination of prevention and intervention strategies.

Grant Trobridge (PI) – College of Pharmacy

National Institutes of Health
"Improved Foamy Virus Vectors for AIDS Gene Therapy"

Clinical trials of gene therapy for AIDS have revealed that a significant roadblock is inefficient delivery of the therapeutic DNA to the patient's chromosomes. This grant provides continued funding for a research study on the potential for using viral vectors from the foamy virus, which is related to the HIV virus, as a transfer agent for AIDS gene therapy.

Hans Van Dongen (PI); John Hinson; Bryan Vila; Matt Layton; Paul Whitney – Sleep & Performance Research Center/College of Medical Sciences/College of Arts and Sciences

Office of Naval Research/US Department of Defense
"Enabling the Identification of Biomarkers for Individual Susceptibility to Fatigue: Scaling Up from Attentional Processes to Operational Performance"

This is continued funding for a three-year study on the effects of sleep deprivation on distinct attention systems that can be separated out. It is part of a continuing line of research looking at the effects of fatigue on cognitive function. The researchers will test participants' performance on laboratory attention tasks as well as simulated deadly force decision scenarios. Data collected will be used to enhance an individualized fatigue prediction model to enable task-specific

predictions of fatigue-related performance impairment. The researchers will also look for genetic markers that explain individual differences in how people respond to fatigue related to distinct attention systems. The study may lead to more efficient staffing of Navy ships and other around-the-clock or safety-sensitive work environments.

Jonathan Wisor (PI) – Sleep and Performance Research Center/College of Medical Sciences

National Institutes of Health

"Regulatory Relationship of Glucose Metabolism and Cerebral Slow-Wave Activity"

This is continued funding for a grant that funds a four-year project to explore the relationship between slow-wave sleep (also known as deep sleep) and glucose metabolism in the brain. The brain's use of glucose drops sharply during sleep, and preliminary data have shown that it is deep sleep that is responsible for this decrease. Using an animal model, the researcher will measure snapshot changes in glucose metabolism as well as electrical activity in the brain during wake and sleep to test the hypothesis that glucose utilization and slow-wave sleep are in a mutual regulatory relationship. The research could shed light on why we sleep and offer insight into medical conditions in which brain metabolism is compromised, such as stroke, diabetes, and complications of childbirth.

Jonathan Wisor (PI); Ilia Karatsoreos – Sleep and Performance Research Center/College of Medical Sciences/College of Veterinary Medicine

National Institutes of Health

"Chronic Methamphetamine Disrupts Sleep-Dependent Molecular/Energetic Homeostasis"

This is continued funding for a study into the effects of chronic methamphetamine use on brain metabolism and sleep. Chronic methamphetamine users exhibit an abnormally high rate of glucose utilization in the brain paired with excessive sleepiness, whereas in normal individuals sleep causes the brain to use less glucose. Wisor will explore whether methamphetamine use disrupts a biochemical series of events triggered by sleep that helps the brain maintain its efficiency by cleaning up its synapses, maintaining only those connections between brain cells that are truly necessary. This work could help increase the understanding of the brain mechanisms that underlie sleep and pave the way for the development of a pharmaceutical intervention that could reverse the suppression of the biochemical pathway, allowing chronic meth users to get more restorative sleep and eliminate the need for them to take meth to feel lucid.

Carol Wysham (PI) – College of Pharmacy

University of Washington/National Institutes of Health

"ACCORDION(ACCORD Follow-On) Clinical Center Network - Option 2, subcontract #747940"

This grant provides supplemental funding for WSU to conduct the ACCORDION study, an observational study that serves as a follow-up to the ACCORD (Action to Control Cardiovascular Risk in Diabetes) trial. ACCORD was a randomized clinical trial of people with type 2 diabetes mellitus who were at high risk of a cardiovascular event—it tested three treatment approaches to determine the best ways to decrease the risk of cardiovascular events in this patient population. Under ACCORDION, participants in the ACCORD trial are followed more closely for another 3.5 years.

Judy Zeiger (PI) – Student Affairs

University of Washington
"Spokane MESA Center"

This contract provides continued funding for the Spokane Math Engineering and Science Achievement (MESA) program. The program builds a pathway to college and careers in science, technology, engineering, and mathematics (STEM). MESA develops programming and initiatives to improve diversity and retention, with an emphasis on traditionally underrepresented students in STEM fields, including African Americans, Native Americans, Hispanic/Latinos, Pacific Islanders, and women.

Hui Zhang (PI) – College of Pharmacy

National Institutes of Health
"Immunotherapy to Mitigate the Negative Effects of Alcohol on Cancer Progression"

There is evidence that chronic alcohol abuse increases the incidence of cancer and decreases the survival of cancer patients. Little is known about how chronic alcohol consumption affects antitumor immunity, which severely hampers the development of effective immunotherapeutic approaches to treat cancer in people who suffer from chronic alcohol abuse. This grant funds a study that will enhance the understanding of the immune mechanisms involved in the interplay between chronic alcohol consumption and melanoma progression. It will evaluate a novel immunotherapy to treat alcohol abusing patients with melanoma.